

Work Order ID 72820

Page 1

Tuesday, August 16, 2011 10:34:56 AM

Item ID: D350-636-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube LH

Start Date: 8/16/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/26/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date: 8-16-11

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
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|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D2750

F

D3492

C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-011 CHG 006

Su 10/27

JL Car MLJ 11-10-27

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| 110  | Skidtubes | 0.00 | | | | | | | |
| Skidtubes | Memo | 0.00 | | | | | | | |
| Skidtubes | 1- Pick D2600-3 Bent | | | | | | | | |
| | 2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750 | | | | | | | | |
| | 3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr. | | | | | | | | |
| | 4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting | | | | | | | | |
| | 5- Drill only two fwd step holes using DT9616. Ensure proper positioning. | | | | | | | | |
| | 6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B) | | | | | | | | |
| | 7- Clecko DT8863B on second side of tube and drill pilot holes for detail B. ***SECOND SIDE*** | | | | | | | | |
| | 8- Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side) | | | | | | | | |
| | 9- Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297". | | | | | | | | |
| | 10- Open up holes of Detail A to 0.297" (total of 2 holes per side) | | | | | | | | |

3B 11/10/20

Dart Aerospace Ltd

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11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004

A/R Aluminum Rod batch: MI18736

AE 11/10/20

12-Grind welds flush as per Dwg D2750

BB 11/10/21

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

Sulcotz

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Sulcotz

Dart Aerospace Ltd

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|---|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140 HandFinish Hand Finishing | Chemical Conversion Coat per QSI005 4.1 Memo | 0.00 0.00 | | | | ① | | SAD | 11-10-22 |
| 150 QC Quality Control | QC3- Inspect Part Finish Memo | 0.00 0.00 | | | | | | | DP 11-10-22 |

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160

0.00



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291 batch: M118343
exp. date: 12-4-5

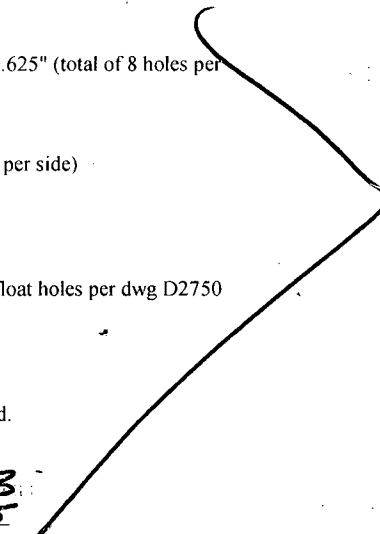
8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)

A/R Aluminum Rod batch: M11836

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

① SAD 11-10-22



BE 11/10/24
BB 11/10/25

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|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

12-Deburr holes

170

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

Sullivan

3 11/10/25

180

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Sullivan

Dart Aerospace Ltd

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QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 BR 11-10-25

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

4:00
320°F
4:30

1X of m-f 11/10/25

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 BR 11-10-27

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| | | | | | | | |
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|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

220

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1- Install inserts as per Dwg D2750

1 BR 11-10-27.

230

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: N/A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: 118343EXP DATE: 12-5

4-assemble o-ring to plug as per dwg D3492 and apply o-ring lube

A/R 55-o-ring lube batch: 1103485-Coat all exposed fasteners with "LPS Procyon" batch: 114596

1 BR 11-10-27.

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| 240 QC Quality Control | QC5- Inspect part completeness to step on W/O Memo | 0.00 0.00 | | | | | | | |
| | | | | | | | | | |
| 250 Packaging Packaging | Pick Kit Memo | 0.00 0.00 | | | | | | | |
| | | | | | | | | | |
| 260 QC Quality Control | QC4- 100% Inspect kits for completeness Memo *****ensure antiseize is on AN8C21A bolts***** | 0.00 0.00 | | | | | | | |

8/16/2011

SP 11-10-27

8/11/2011

Dart Aerospace Ltd

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Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270



Packaging

Packaging

0.00

Memo

0.00

Package as per PPP D350-636-011

Mr I

280



QC

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

Quality Control

11/10/28 *C**11/10/31* *MF*
11-10-28

Dart Aerospace Ltd

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Picklist Print

Tuesday, August 16, 2011 10:35:02 AM

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Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Ver: EC
 IPP Rev: M 08-04-22 update steps 4, 13 DD verified by: EC
 IPP Rev: N 08-09-23 revF as per dwg DD verified by: ec
 IPP Rev: O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
 DD ver: EC IPP Rev: P 10.06.22 revise
 seq 110 DD ver: EC IPP Rev: Q 10.10.01 as per IIN revH
 DD ver: EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|-----------------|-------------|--------------|---------------|----------------|--------|
| D3492-1 | | Manufactured | No | | | 230 | Each | 100.0000 | 8 | 8 | | BL 11-10-27. | |
| Plug | | | | | | | | | | | | | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | | <u>Loc Code</u> | | | | | |
| | | | | FP 73402 | | 100 | | | | 8. | | | |
| | | | | 69531 | | 8 | | | | | | | |
| | | | | 71836 | | 92 | | | | | | | |
| D3492-3 | | Manufactured | No | | | 230 | Each | 189.0000 | 8 | 8 | | BL 11-10-27. | |
| Plug | | | | | | | | | | | | | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | | <u>Loc Code</u> | | | | | |
| | | | | FP | | 189 | | | | | | | |
| | | | | 70692 | | 9 | | | | | | | |
| | | | | 71838 | | 100 | | | | 8. | | | |
| | | | | 72126 | | 80 | | | | | | | |

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 16, 2011 10:35:02 AM

Work Order ID: 72820



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

266.0000

8

8



O-RING



BR 11-10-27

Location

Loc Qty

Loc Code

FP

228

117460

8

118077

20

118612 ✓

200

FP-A

38

110915

35

115589

3

NAS1149D0863J

Purchased

No

250

Each

178.0000

2

2



WASHER



SP 11-10-27

Location

Loc Qty

Loc Code

ST298

178

118078

178

D2744

Manufactured

No

110

Each

29.0000

1

1



Cap



2x

BE 11/10/20
B 71861 x1

Location

Loc Qty

Loc Code

LG002

29

62715

1

70881

28

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 16, 2011 10:35:02 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110

Each

23.0000

1

①

BB 4/10/20 X



Extrusion Bent

Location

Loc Qty

Loc Code

LG

75023

23

66875

8

70142

1

72153

14

D2743

Manufactured No

160

Each

264.0000

8

8



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG

206

69818

41

71839

165

LG001

58

67766

4

68251

54

B

D2739

Manufactured No

160

Each

12.0000

1

1



350 I Beam

Location

Loc Qty

Loc Code

LG

12

70823

12

B72157

①

SAD 11-10-20

D3490-3

Manufactured No

160

Each

49.0000

4

4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

49

68952

2

70768

47

B B295 4

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 16, 2011 10:35:02 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

D3490-1 Manufactured No

160

Each

130.0000

4

4



Cross Bolt Spacer



BE 11/14/24

Location

Loc Qty

Loc Code

LG

128

67773

5

69823

58

71841

65

LG001

2

62450

2

4

ALS4-1032-225

Purchased

No

220

Each

931.0000

38

38



Insert



BR 11-10-27

Location

Loc Qty

Loc Code

ST282

931

110768

62

117717

9

118386

860

38.

D3793-3

Manufactured

No

230

Each

25.0000

1

1



Wearshoe



BR 11-10-27

Location

Loc Qty

Loc Code

FP018

25

69283

1

70813

12

72160

12

1

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

H:\FORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, August 16, 2011 10:35:02 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

AN8C35A

Purchased

No

230

Each

135.0000

1

1



BOLT



BR 11-10-27.

Location

Loc Qty

Loc Code

FP

99

117511 ✓

33

118286

66

FP-A

1

115960

1

ST345

34

117834

34

ST346

1

114442

0

115188

0

115960

1

D3793-1

Manufactured

No

230

Each

19.0000

1

1



Wearshoe



BR 11-10-27.

Location

Loc Qty

Loc Code

FP018

19

69285

1

70781

18

D3488-041

Manufactured

No

230

Each

16.0000

1

1



Blade Fitting Assembly, LH



BR 11-10-27.

Location

Loc Qty

Loc Code

FG008

11

69903 ✓

11

FP007

1

61689

1

FP008

4

67788

4

Dart Aerospace Ltd

| | | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| W/O: | | WORK ORDER CHANGES | | | | | |
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| | | | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

D3794-3 Manufactured No

230

Each

14.0000

1

1



Gasket



BR 11-10-27

Location

Loc Qty

Loc Code

FP010

73423

2

68357

2

FP018

12

70812

12

AN6C44A

Purchased

No

230

Each

127.0000

4

4



BR 11-10-27

BOLT

Location

Loc Qty

Loc Code

FG

2

103964

2

ST344

125

117950

25

118112

2

118332

48

118387 ✓

50

4.

MS21083C8

Purchased

No

230

Each

137.0000

1

1



BR 11-10-27

NUT

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST293

47

118077

47

ST303

89

115884

0

117423

9

118354

30

118614 ✓

50

1

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

H:\FORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

D3536-25

Manufactured No

230

Each

21.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP012 74526
70780

21

21

1

D3631-1

Manufactured No

230

Each

275.0000

8

8



Washer

Location

Loc Qty

Loc Code

ST072 ~~74526~~
68062

275

275

+

8

D3791-1

Manufactured No

230

Each

13.0000

1

1



Wearplate

Location

Loc Qty

Loc Code

FP017 74527
62239
69282

13

2

11

1

AN960C10L



NAS1149C0332 ✓ Purchased
R

No

230

Each

0.0000

38

38



washer

118354

38

BR 11-10-27.

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

D2745 Manufactured No

230

Each

341.0000

8

8



Bushing



BR 11-10-27

Location

Loc Qty

Loc Code

FP-A

179

69529

155

69816

24

ST023

162

71835 ✓

162

8

AN3C5A

Purchased

No

230

Each

1,389.000

34

34



Bolt



BR 11-10-27

Location

Loc Qty

Loc Code

FP-A

7

115835

7

ST350

1382

116419

28

116549

42

117343 ✓

500

117764

300

117872

12

118451 ✓

500

13

D3537-1

Manufactured

No

230

Each

24.0000

3

3



Wearpad



BR 11-10-27

Location

Loc Qty

Loc Code

FP

17

71574

17

FP017

7

69817

5

70686

2

3

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

H:\FORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0832R

Purchased

No

230

Each

368.0000

1

1



WASHER



BR 11-10-27

Location

Loc Qty

Loc Code

FP-B

38

114915 ✓

38

ST297

330

114915

330

AN3C6A

Purchased

No

230

Each

340.0000

4

4



BOLT



BR 11-10-27

Location

Loc Qty

Loc Code

FP-A

1

111982

1

ST351

339

111982

2

116419

23

116549

2

116704

12

117619

22

117688

28

117872

50

118422 ✓

200

4

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

H:\FORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased

No

230

Each

244.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP

59

117291

2

117887

57

FP-A

185

116582

5

118384

180

D3535-25

Manufactured

No

230

Each

19.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP018

74592

19

62233

1

69743

18

D3794-1

Manufactured

No

230

Each

23.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP010

74529

23

70779

23

Dart Aerospace Ltd

| | | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| W/O: | | WORK ORDER CHANGES | | | | | |
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| | | | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

MS21043-6

Purchased

No

230

Each

589.0000

4

4



NUT



BR 11-10-27

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

569

112314 ✓

359

117887

10

118384

200

4.

D3493-1

Manufactured

No

250

Each

59.0000

2

2



Washer



SP 11-10-27

Location

Loc Qty

Loc Code

ST062

59

70697

59

2x

MS21083C8

Purchased

No

250

Each

137.0000

2

2



NUT



SP 11-10-27

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST293

47

118077

47

ST303

89

115884

0

117423

9

118354

30

118614

50

2x

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries.

Picklist Print

Tuesday, August 16, 2011 10:35:03 AM

Work Order ID: 72820

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/16/2011

Required Date: 8/26/2011

Start Qty: 1.00

Required Qty: 1.00

AN8C21A

Purchased No

250

Each

75.0000

2

2



BOLT

Location

Loc Qty

Loc Code

ST344

25

117764

25

ST345

50

118045

50

NAS1515H3L

Purchased No

230

Each

152.0000

4

4



WASHER

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

112

113362

112

D2741

Manufactured No

250

Each

16.0000

1

1



Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

16

69133

16

D3532-1

Manufactured No

250

Each

27.0000

2

2



Spacer

Location

Loc Qty

Loc Code

ST065

27

69895

27

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

| QTY -041 | QTY -042 | QTY -043 | QTY -044 | PART NUMBER | DESCRIPTION |
|-------------|-------------|-------------|-------------|---------------|---|
| X | | | | D2750-041 | 350 SKIDTUBE ASSEMBLY, LH |
| | X | | | D2750-042 | 350 SKIDTUBE ASSEMBLY, RH |
| | | X | | D2750-043 | 350 SKIDTUBE ASSEMBLY, LH |
| | | | X | D2750-044 | 350 SKIDTUBE ASSEMBLY, RH |
| 1 | 1 | 1 | 1 | D2739 | WEB |
| 8 | 8 | 8 | 8 | D2743 | SPACER |
| 1 | 1 | 1 | 1 | D2744 | CAP |
| 8 | 8 | 8 | 8 | D2745 | BUSHING |
| 1 | | | | D2750-1 | SKIDTUBE WELDMENT, LH |
| | 1 | | | D2750-2 | SKIDTUBE WELDMENT, RH |
| | | 1 | | D2750-3 | SKIDTUBE WELDMENT, LH |
| | | | 1 | D2750-4 | SKIDTUBE WELDMENT, RH |
| 1 | | 1 | | D3488-041 | BLADE FITTING, LH |
| | 1 | | 1 | D3488-042 | BLADE FITTING, RH |
| 4 | 4 | 4 | 4 | D3490-1 | SPACER |
| 4 | 4 | | | D3490-3 | SPACER |
| | | 4 | 4 | D3490-5 | SPACER |
| 8 | 8 | 8 | 8 | D3492-041 | PLUG ASSEMBLY |
| 8 | 8 | | | D3492-043 | PLUG ASSEMBLY |
| | | 8 | 8 | D3492-045 | PLUG ASSEMBLY |
| 1 | 1 | 1 | 1 | D3535-25 | WEARSHOE |
| 1 | 1 | 1 | 1 | D3536-25 | GASKET |
| 3 | 3 | 3 | 3 | D3537-1 | WEARPAD |
| 8 | 8 | 8 | 8 | D3631-1 | WASHER |
| 1 | 1 | 1 | 1 | D3791-1 | WEARPLATE |
| 1 | 1 | 1 | 1 | D3793-1 | WEARSHOE |
| 1 | 1 | 1 | 1 | D3793-3 | WEARSHOE |
| 1 | 1 | 1 | 1 | D3794-1 | GASKET |
| 1 | 1 | 1 | 1 | D3794-3 | GASKET |
| 38 | 38 | 38 | 38 | ALS4-1032-225 | INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225) |
| 34 | 34 | 34 | 34 | AN3C5A | BOLT |
| 4 | 4 | 4 | 4 | AN3C6A | BOLT |
| 4 | 4 | 4 | 4 | AN6C44A | BOLT |
| 1 | 1 | 1 | 1 | AN8C35A | BOLT |
| 38 | 38 | 38 | 38 | AN960C10L | WASHER |
| 1 | 1 | 1 | 1 | AN960C816L | WASHER |
| 4 | 4 | 4 | 4 | MS21043-6 | NUT |
| 1 | 1 | 1 | 1 | MS21083C8 | NUT |
| 4 | 4 | 4 | 4 | NAS1515H3L | WASHER |

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

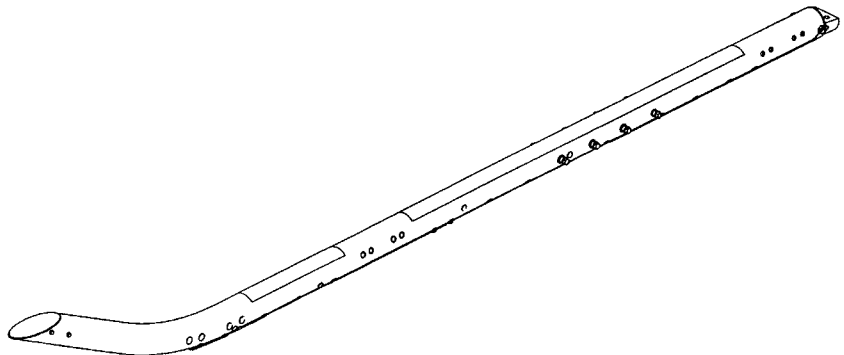
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11-08-16

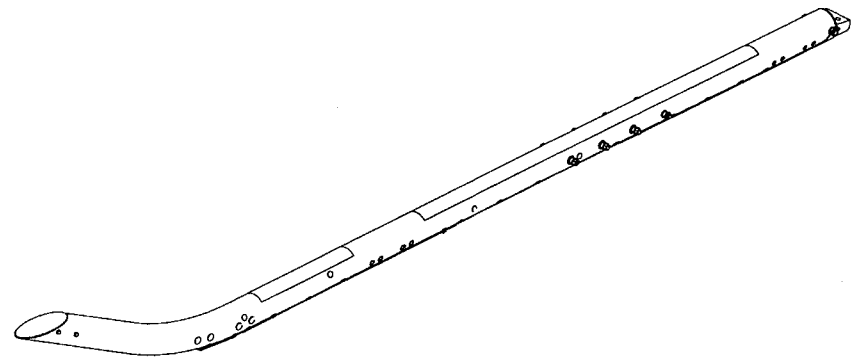
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|--|---|----|----------|
| F | INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/3 REPLACES D3535-13/35 (ZN C8-1); D3794-1/3 REPLACES D3536-13/35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043 | PH | 08.07.16 |
| E | CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8 | CB | 07.05.17 |
| D | ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157 | PH | 06.01.05 |
| C | ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740 | CP | 98.11.18 |
| B | CHANGE MS24694-S293 TO AN8-16A | CP | 98.09.01 |
| A | NEW ISSUE | DS | 98.04.16 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | | | |
| DRAWN | | | |
| CHECKED | | | |
| MFG. APPR. | | | |
| APPROVED | | | |
| DE APPR. | | | |
| DATE | 08.07.16 | | |
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D2750-041 350 SKIDTUBE ASSEMBLY, LH

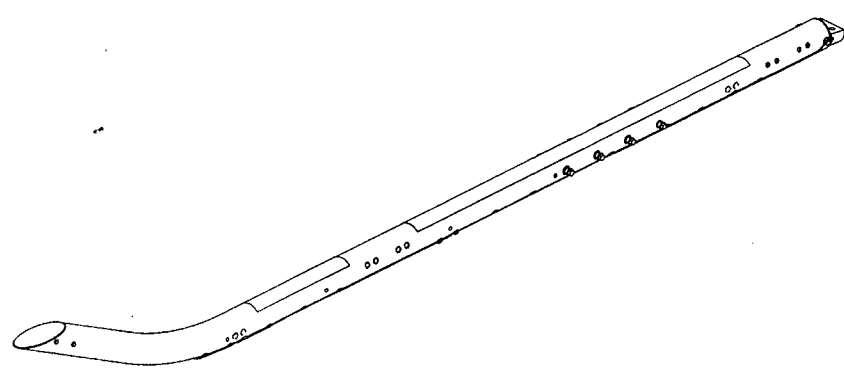


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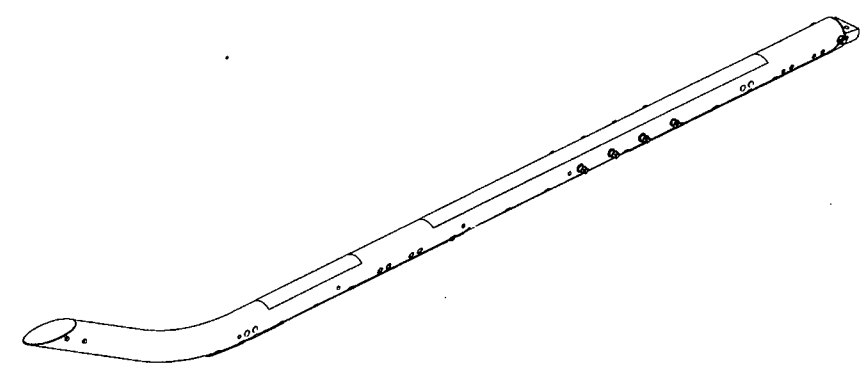
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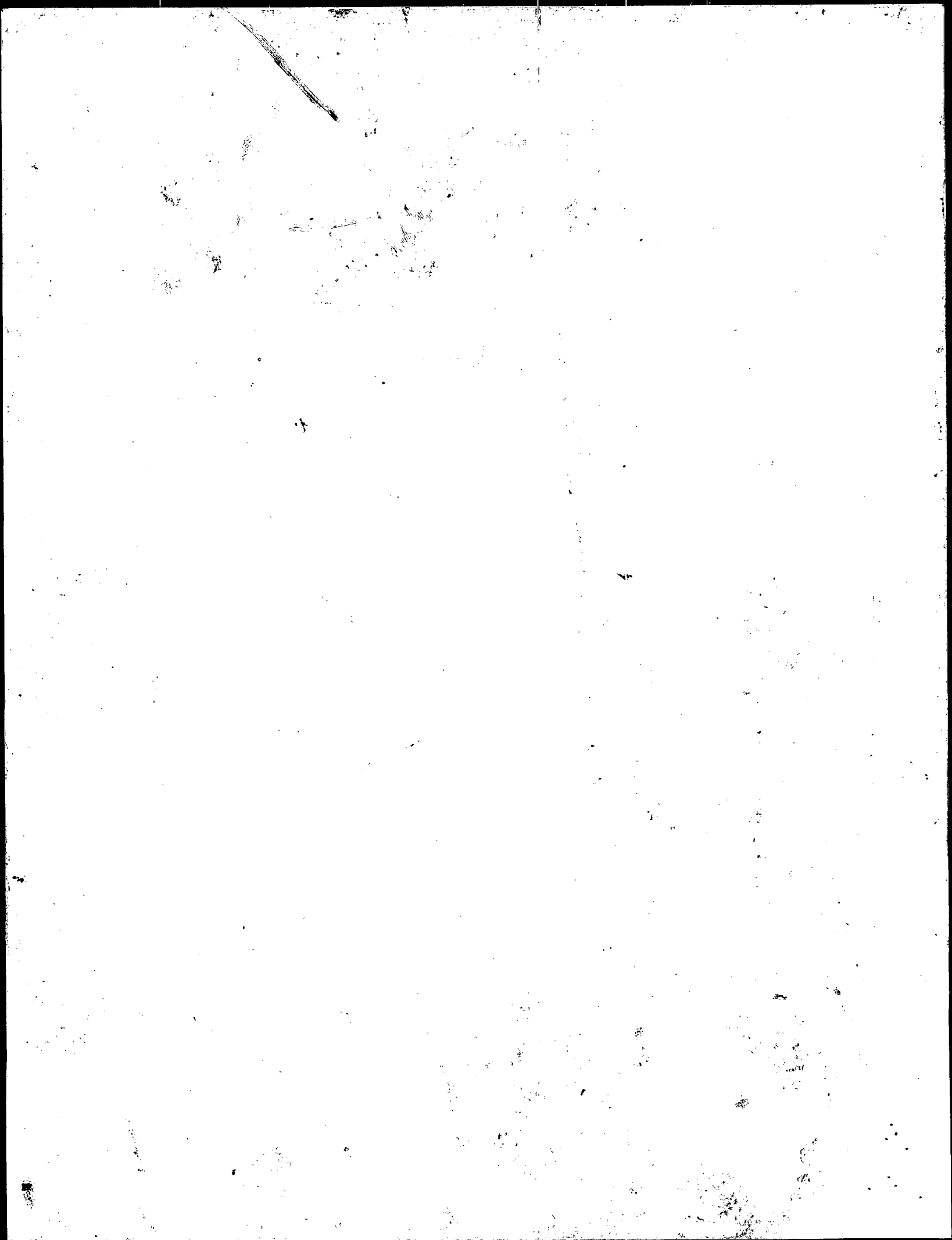
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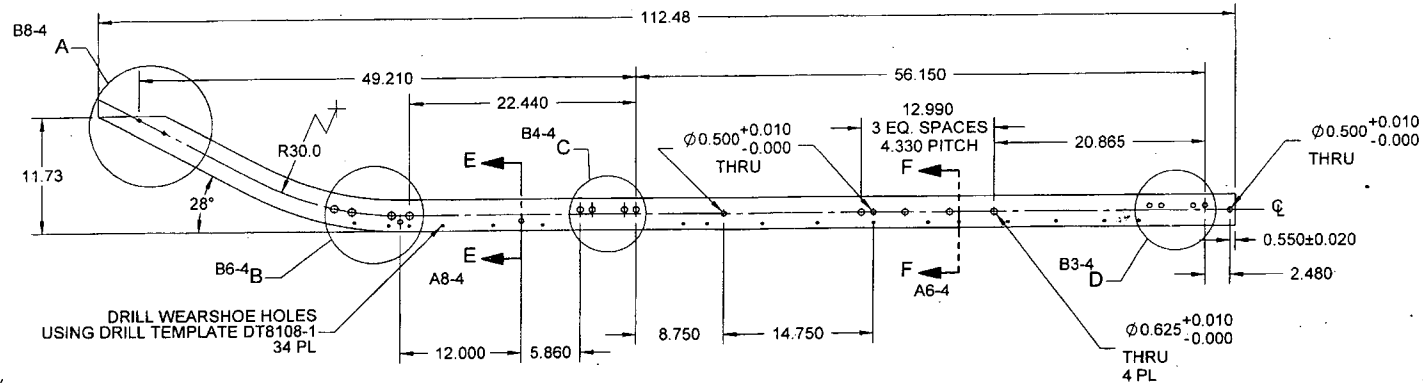
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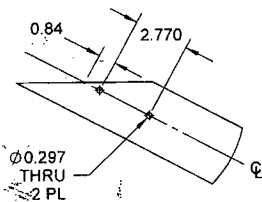
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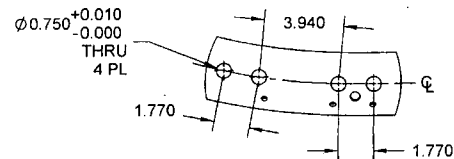
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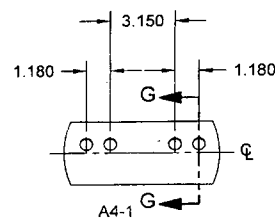
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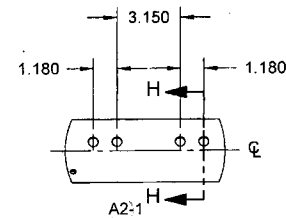
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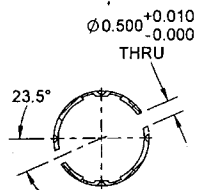
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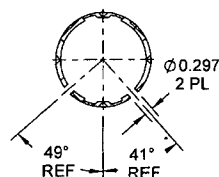
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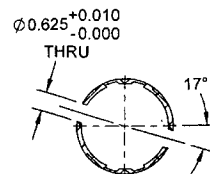
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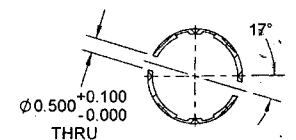
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SECTION F-F
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SECTION G-G
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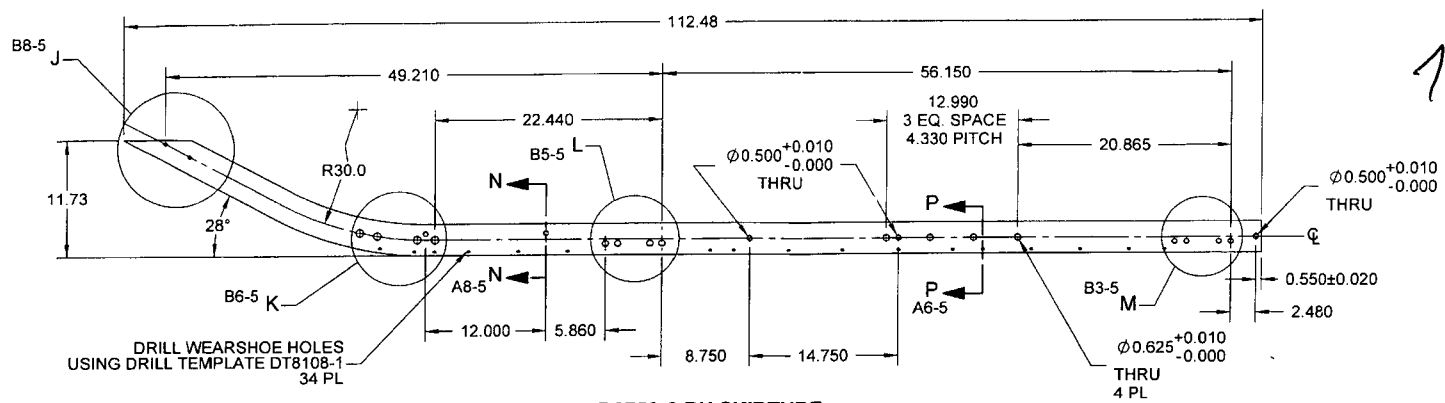


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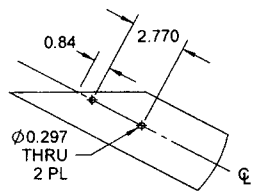
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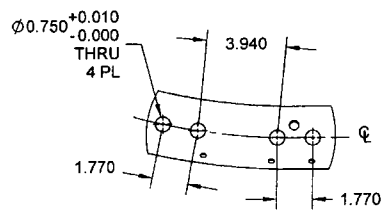
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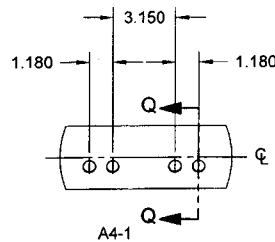
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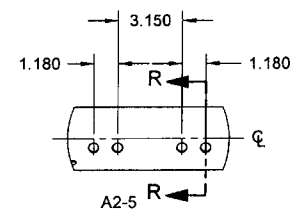
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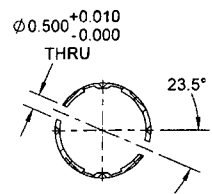
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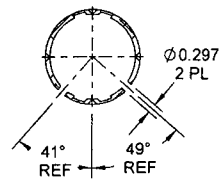
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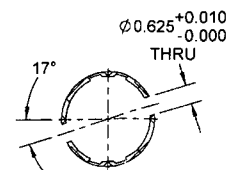
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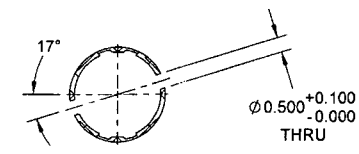
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SECTION P-P
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SECTION Q-Q
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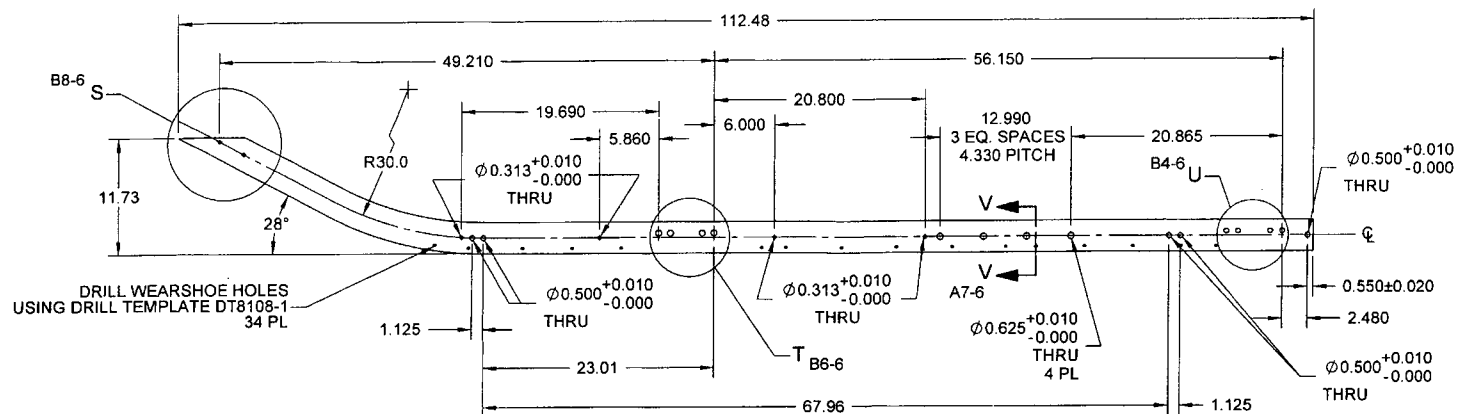
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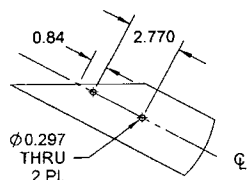
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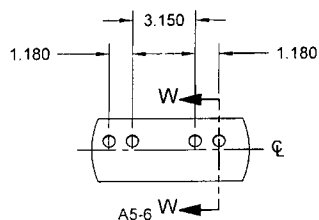
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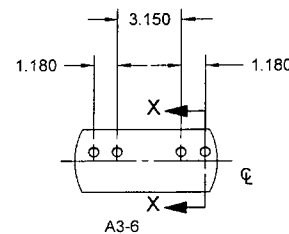
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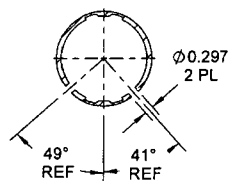
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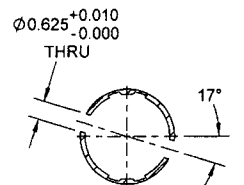
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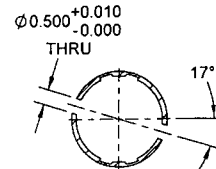
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SECTION V-V
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SECTION W-W
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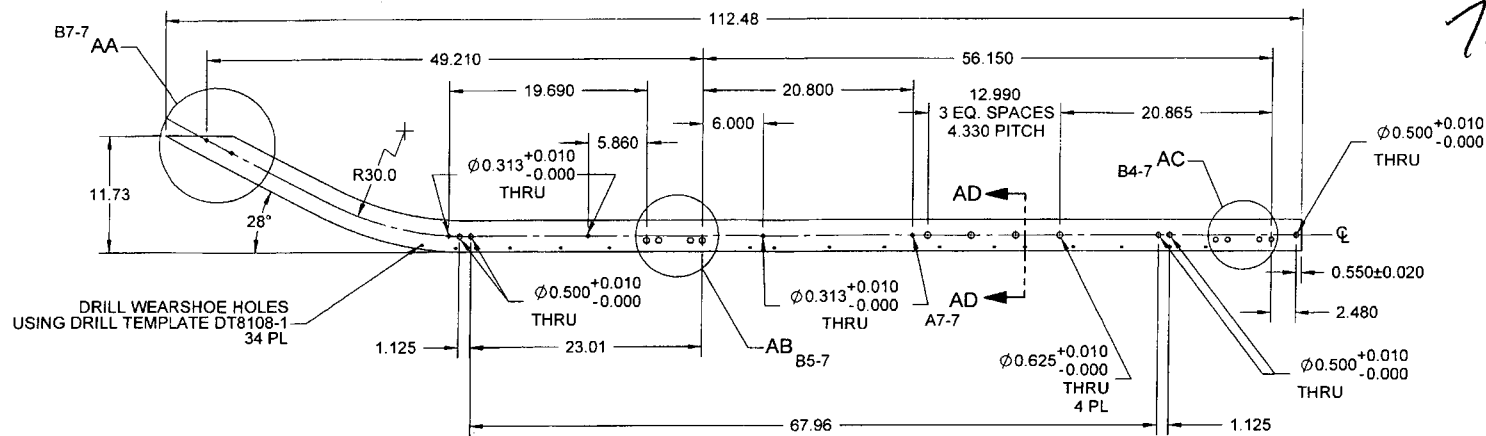
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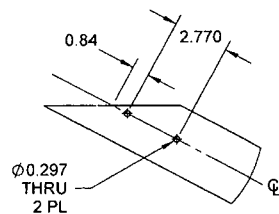
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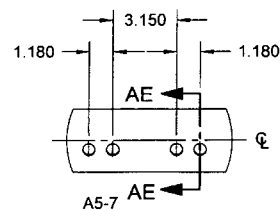
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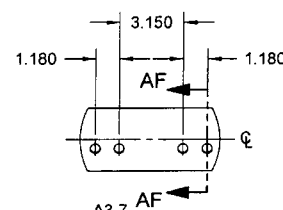
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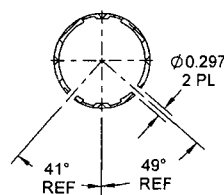
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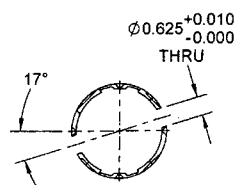
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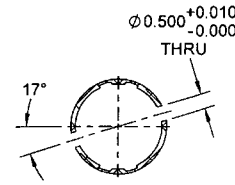
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SECTION AD-AD
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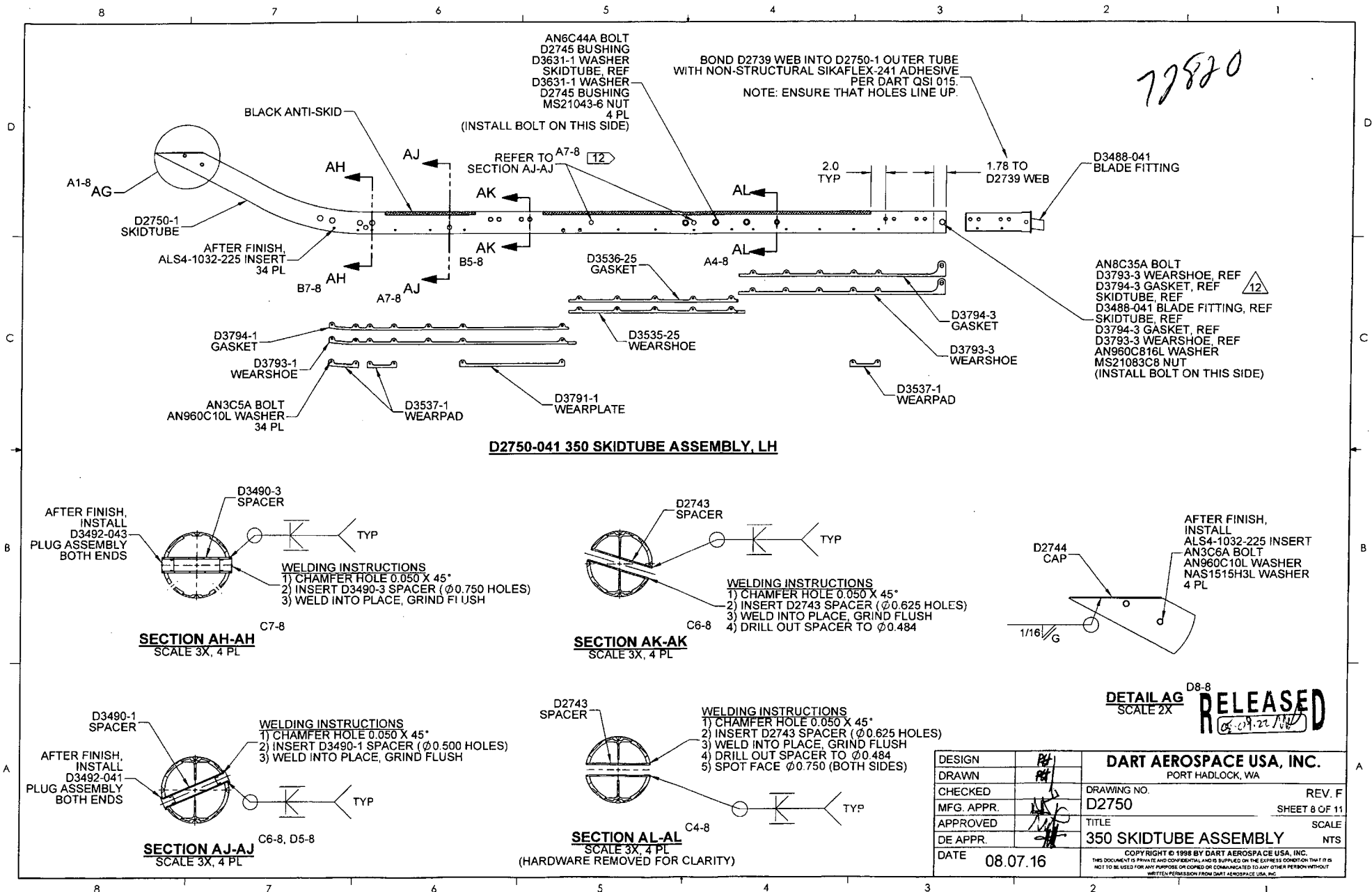
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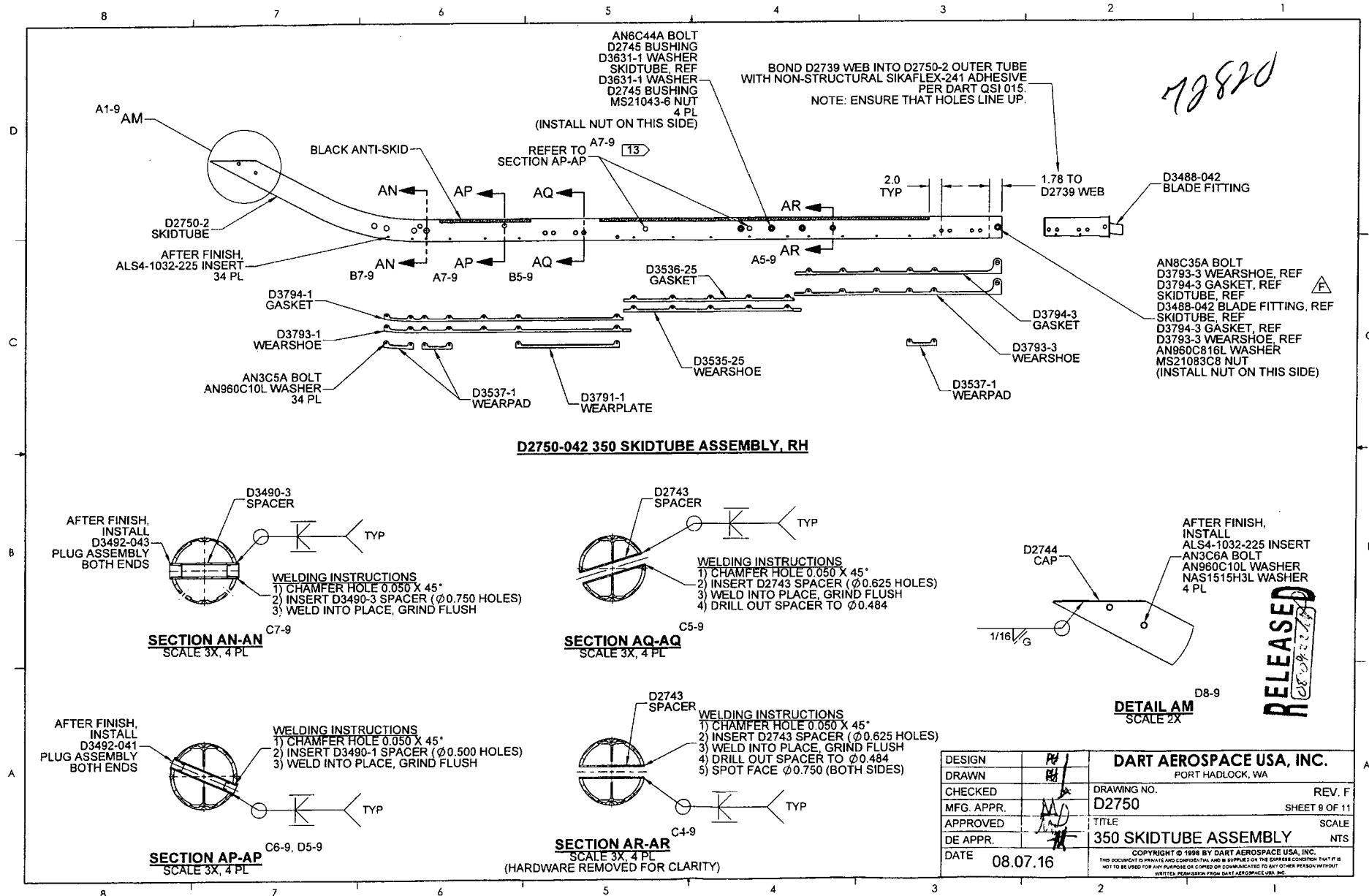


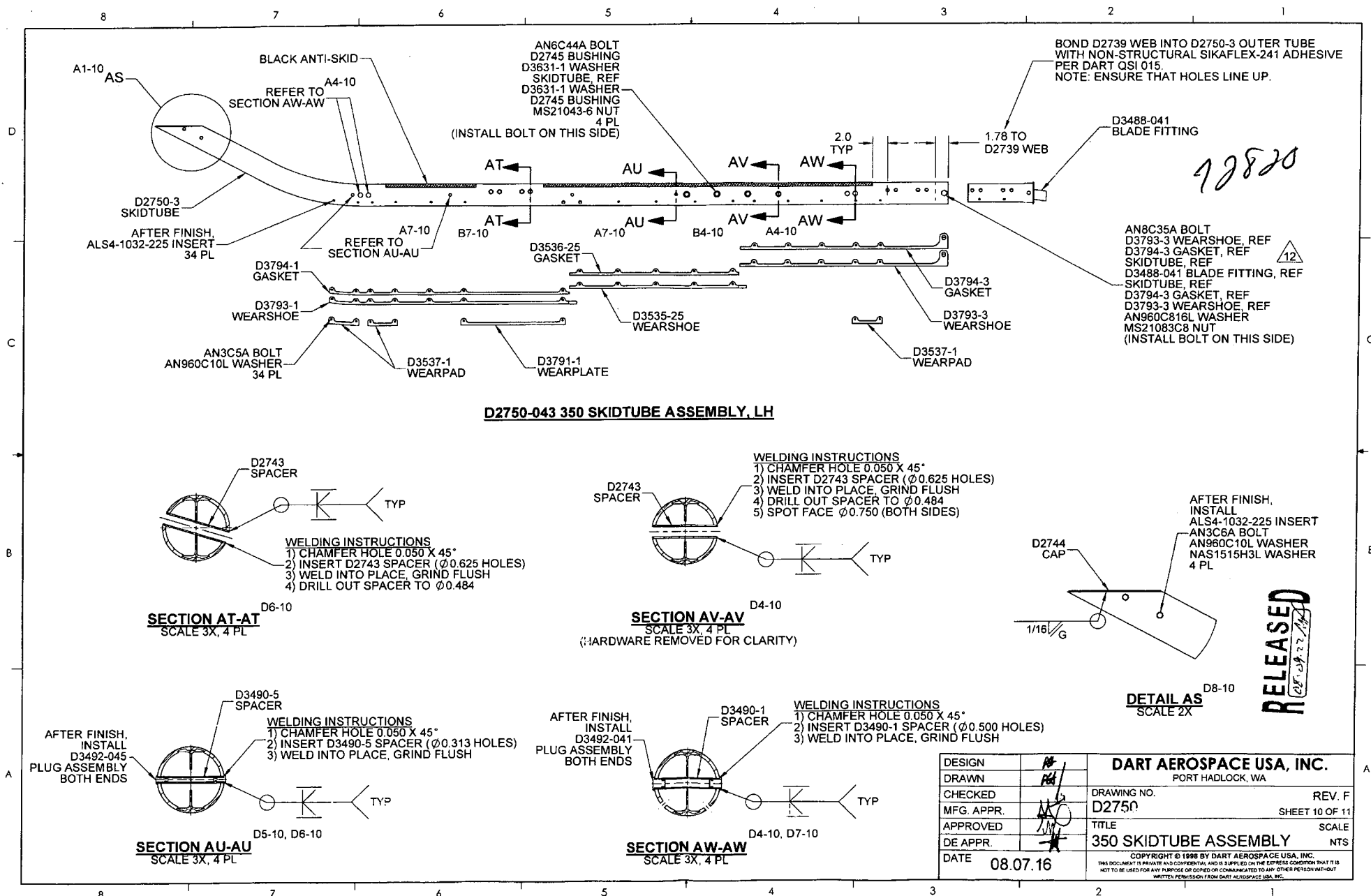
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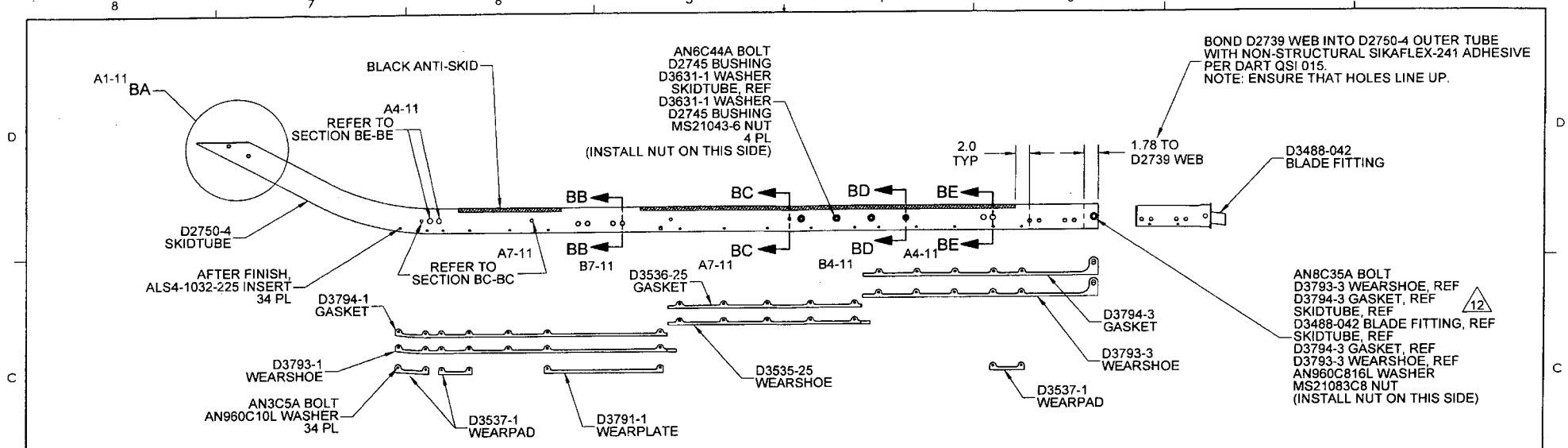
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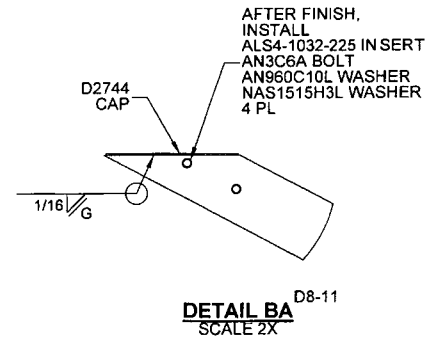
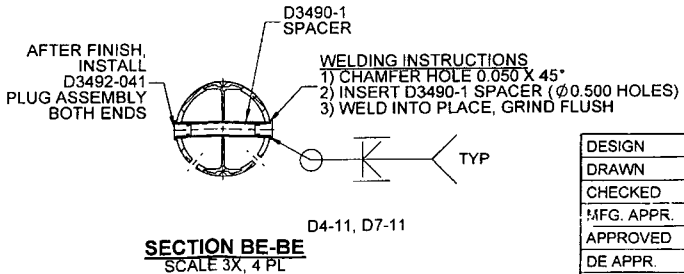
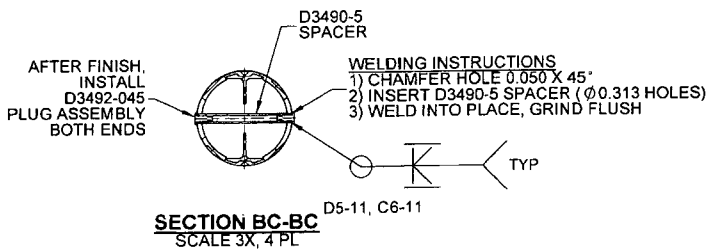
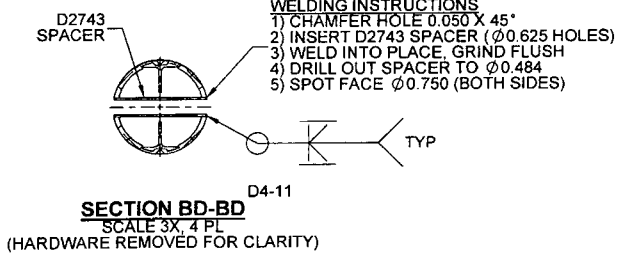
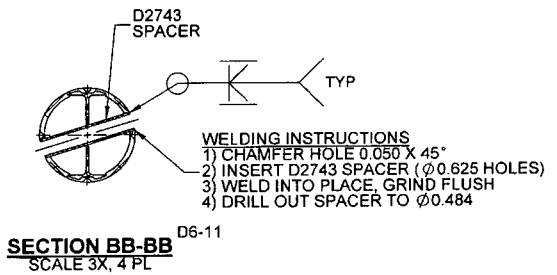




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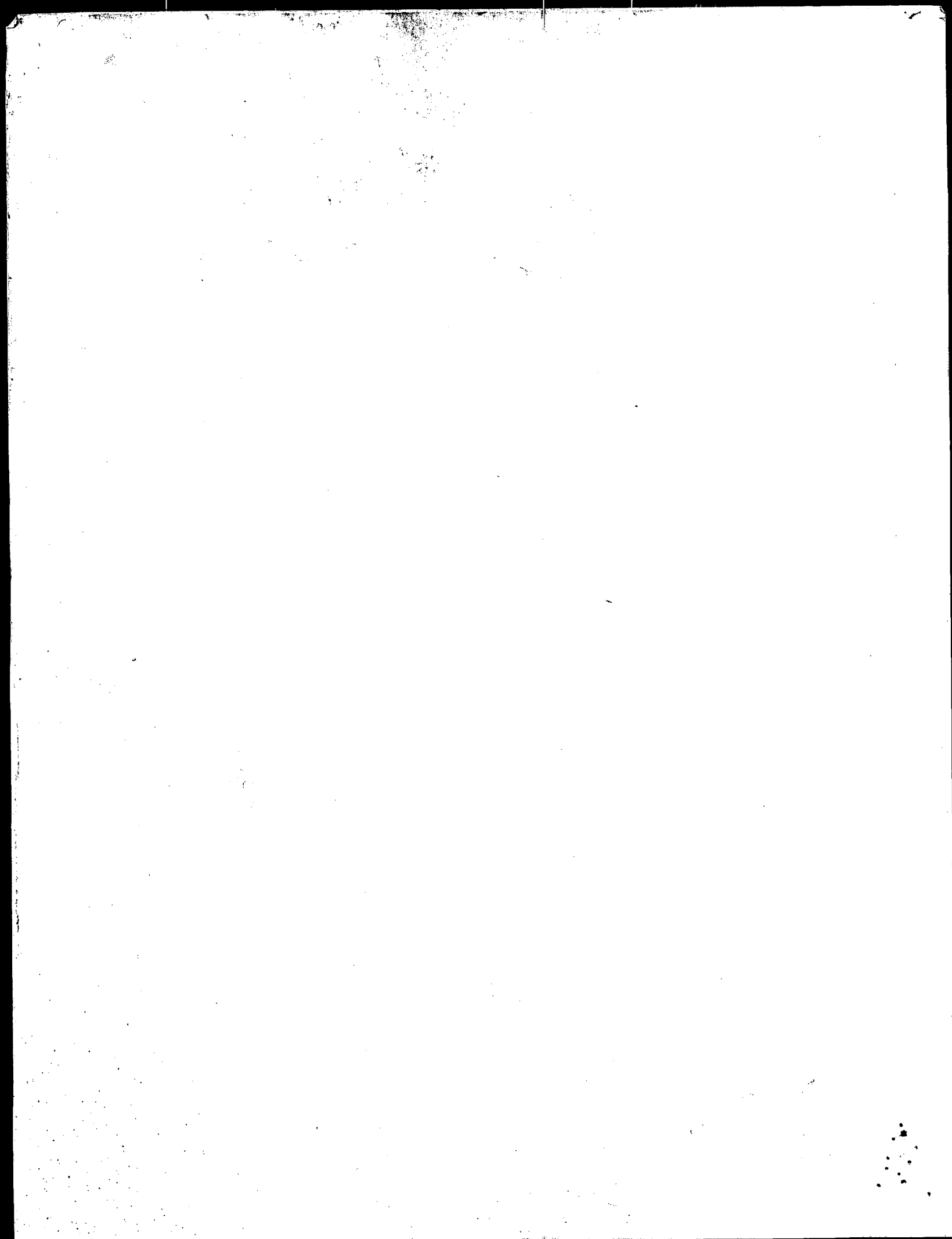
D2750-044 350 SKIDTUBE ASSEMBLY, RH



RELEASED
06-07-22 / WJ

| | | | |
|------------|----------|---------------------------------|--------|
| DESIGN | HA | DART AEROSPACE USA, INC. | |
| DRAWN | HA | PORT HADLOCK, WA | |
| CHECKED | HA | DRAWING NO. D2750 | REV. F |
| MFG. APPR. | HA | SHEET 11 OF 11 | |
| APPROVED | HA | TITLE | SCALE |
| DE APPR. | HA | 350 SKIDTUBE ASSEMBLY | |
| DATE | 08.07.16 | NTS | |

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NO. 270

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: B 72821
Part number: D 350 636 D12
Description: 350 skid tube
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat Dunn Date of Test Coupon 11-10-07
Welder Barclay Elliott Date of Test Coupon 11-10-07

The above named individual is qualified in accordance with AWS D17.1.2001 to weld